Research practical - Summer term

Who’s there

Minutes from meetings

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10/06/16 - 1st Planning meeting

Requirements

Web application
    displays connection data for each room
Map of each section

Apps to add ground data to the database

Time series moving average model.

Topics to explore

Possible research avenues
User presentation
    Maps
    Overall building averages
Architecture
Data modeling process

    Calculating number of people
    Improve accuracy over time

Future research

15/6/16 - Plan for next few days

1. Things to do over the end week / weekend
    a. Look over git skill - practice on your own repository
        i. Try and use command line skills
    b. Have a look at basic requirement that might be used in SRS
    c. Look at the tools we might use for development
        i. Java as overall controller possibly
        ii. Python for data analytics

2. Learning how to use scikit python
    a. Find resources

3. Think about requirement and discuss them on monday

4. Look for relevant academic papers and add links into the information document

5. Ask michael about the papers he found for the project.

13/06/16 – Monday planning meeting

- Introduction of each team member
  - Discussion of backgrounds of each team member
  - Strengths and weaknesses

- Team organization
  - Need to define outlines
  - Standards

1. Brainstorming ideas for project
    1. Possible research avenues
        i. Methods of counting people
        ii. Previous models used in studies like this
            1. How to adapt the models to our situation
        iii. Models used in similar situations
        iv. Efficient database handling / processing
        v. Correct cleaning of data
        vi. Code quality / efficiency

    2. Overall goals at the end - Deliverables

        i. Web application the historic data in a clear and useful way
            1. Extension - API to access raw data

        ii. Interface data
            1. Want to see prediction for each room of number of students
            2. Meta data for the room - Class / subject / etc
            3. Heat maps of number of students in each building

        iii. Data on how accurate the model is.
            1. Graphing the error level
            2. Plotting the prediction against the data

        iv. Look at different room types
            1. I.e number of plugs / location
        v. Looking a different class levels - 1st year vs 4th year vs postgrad

        vi. Extra
            1. Automated system for most efficient way to timetable
            2. Linking attendance with external factors
                a. Time in the morning
                b. Weather
                c. Time of year
            3. To adjust temperature controller
            4. Reducing the movement of students across campus

3. Basic architecture
    i. Database for storage
    ii. Controller for DB interaction
    iii. Data processing for web display
    iv. Application to add / remove date from the database
    v. User web page for interaction

4. Possible extensions
    i. Mobile application - Android / Apple
    ii. Improved data modeling - Machine learning
        1. Collection of data to help model converge on more accurate results

5. Customer interaction
    i. Come up with features of the application
    ii. Need survey to understand the usefulness of features

6. Future extensions
    i. Increasing data quality by getting the mac address of users
        1. Used to identify the types of user - laptop / mobile
    ii. Determine types of users by data usage of devices
    iii. More formalised system where devices are registered to users specifically
    iv. Modular system that can be adapted to new locations
    v. Investigating the differences of device numbers for different populations.

2. Flesh out ideas for presentation.
    1. Introduction of the problem
    2. Basic user interface
        i. Website
        ii. Apps
        iii. User experience
    3. Basic data modeling introduction
        i. Basic way of looking at how many people are in the room
        ii. Look at specific models for each class
        iii. Introduction of additional features
            1. Weather
            2. Student population type - CS / Arts / Science
            3. Time of data
            4. Room numbers
            5. Number of plugs in the room
        iv. Testing each feature to make sure they are significant
    4. Architecture
        i. Database / Data processing / Web user interface
        ii. Database / Data input app
    5. Goal of modularity
        i. Looking at implementing general forms of each code section
        ii. Easy to adapt the model for new ideas / features
    6. Future research
        i.

3. Formatting discussion. (Left)
    1. Documentation
    2. Code
        i. Carry out research into how we might format the codebase.

4. Rough planning for scrums.
    1. Starting looking at it towards the end of next week

5. Identifying skills we need to work on.

6. Planning for these
    1. Next week - requirement planning
    2. Specification with customer input if possible
    3. Basic research / identifying areas for further investigation
    4. Outline areas of academic research that has already been carried out.
    5. Use this a base for scrum planning

14/6/16 - Presentation planning

The team (or Silvia and Ophelie) met to finalise the content of the presentation and its graphical layout.
The main goal was to have a ppt with a simple graphic and less text as possible, in order to be easy to follow and force the audience to listen the talk without being distracted by the content of the slides.
The first complete draft of the presentation was completed before lunch and it was modified later on to suit the flow of the presentation.

20/6/16 -

Rough agenda

- General meeting to try and plan out the goals of this week
- The aim of this meeting will be to set down the main ideas for how the progress of the project should take place
- Aim to have discussion on research goals and a loop to mapping out the first sprint
    - Any planning at this stage should include the flexibility to adapt to changes that may occur along the way.
- Prepare for customer meeting on Wednesday

Minutes

1. Priorities to have done by Wednesday
    a. Have draft SRS for the meeting
        i. Should have good description about the deliverables
    b. Be able to show what we think the deliverables of the project should be
    c.

2. Need to flesh out the design architecture.
    a. Idea of how the project will be structure in terms of modules
    b. Types of software we are planning on using.
    c. Look at the flow of information

3. Architecture issues
    a. Database
        i. To use sql / sqllite database
        ii. Languages to be used to interact with the database
    b. Server language
        i. Java vs Python
        ii. Using Java MVC controller - Look at different controller

    c. Software for organizing your code
        i. Using Maven?
        ii.

4. Research
    a. Start looking for research papers

5. Summary
    a. Topics to look up
        i.
    b. Deliverables for Wednesday
        i. SRS
        ii. Paper prototype
        iii. Rough outline of proposed architecture

Conclusion

- Start process of fleshing out the section two requirements for the SRS
- Look at architecture overview for overall system

21/6/16 - First online meeting

Rough agenda

- Try to use the appear.in website to carry out the first of online meetings
- Plan what we are to do for the day and what need to be finished for the wednesday meeting
- Have goals of the requirements to be completed
- Generate question to ask the customer tomorrow

Minutes

1. Group has opted to use the appear.in website for carrying out group interactions
    a. Appears to be easier to use then skype

2. Plan to go through each section of the SRS and see what each individual has in terms of ideas
    a. First looking over devins bullet points

3. Goal is to provide an overview of the requirements
    a. Listed all the main requirements that the group has agreed upon
        i. This will act as the main template that will be used for flesh out the SRS
    b. Each section looks at a specific feature that we believe that the user will want will require
        i. This issue will be discussed with the customer on the 22/6/16
        ii. Features that are not required by the customer will be removed / added to the future goals

4. Looking at how we would present information interface to the user
    a. Looking at possible creating a map based interface
    b. All member have agreed the map will be something good to add to the database
    c. Decide that the use of maps with rooms mapped on to them

Conclusion

- Goals
    - Going to complete the first two sections of the SRS
        - This will outline the user's requirements
    - Create questions for the customer tomorrow

- Discussed requirements to be completed
    - Data analysis
        - Calculation of no of people in the room
        - Recalculation of averages over time

    - Users interfaces
        - Website
            - Use of a map to show the location of rooms within the building
            - Used to show averages as well
            - Present information all of the data analysis available
                - Possibility of two format => simple / full information
            - Slider allowing user to see how occupancy changes over time on a particular map
                - Colour coded / percentages ?
                - Good high level overview
        - Mobile app
            - Allow users to select the room / time
                - In order to input ground truth data
            - This will then be confirmed as being input
            - Filter for nonsense information at server level.

    - Technical requirements => brief overview of the architecture
        - Server
            - Manage interactions between interfaces
            - Ensure security
        - Database
            - Use of full sql database to manage all the information

    - Management requirements
        - Ability to change what rooms are timetables
            - System should be able to interface with the data format provided by ucd
        - Ability to change what rooms are being monitored (add / remove)
            - Included adding / removing maps
        - Change meta information about rooms
        - Upload wifi data in a specified format
        - Ability manually add ground truth data through the website

                - Can be done a specified format
                - Can be manually added for each room

    - Data output
        - Production of reports
            - PDF reports that are auto generated with graphs
            - Could be specific to room / module
        - Users can download bulk information

    - Documentation requirements
        - Specify methods for carrying out interactions with the database
        - Template for inputting information of all kinds

    - Data cleaning for input requirements
        - Each area where information is taken in form the user / management
        - Data will be cleaned and formatted as specified by the documentation
        - This will involve small bridging scripts that will be unique to each location
        - Alternatively we will also allow users to input the data directly.
            - Will also allow for updates

    - Extra features
        - Ability for users to change the maps format
        - Allow lecs to contact other members of staff requesting a room swap

- Paper prototypes for interfaces

- Questions for customer
    - Format of the timetable information that is generated by ucd
    - How data in general will be formating
        - Cleaning scripts

    - Allowing people to request a room swap
    - What type of reports would the college like to see
    - What is the most important aspect to the data
    - Should the local admin be able to update the maps / rooms

- To do
    - Flesh out interface requirements as specified in the meetings
    - Add more questions for customer
    - Create paper prototypes individual
        - Website
        - App

    - Break down of work

- Requirements - Devin / Conor
- Paper prototyping lead - Ophélie (rest of group to come up with ideas)
- Introduction section - Silvia

22/6/16 - Meeting with customer

Agenda

- Talk to Gavin and Anthony about the software requirements
- Show them the paper prototypes
- Talk about proposed features of the overall software
    - Discuss advanced features that might be included in the model
- Go over plans for how the planning is going for the overall project in terms of sprints
- Look for information from the customers about suggested features

Minutes

1. Start of meeting gave a brief overview of where we were at with the project
    a. Talked about how we were looking at requirement at the moment
    b. Asked about the long term plan.
2. Showed paper prototypes
    a. Asked about methods of grouping rooms
        i. Not included module
        ii. Better groupings
3. Uroom system for meta information about rooms

4. Use case beyond timetabling
    a. Do they need to have all the facilities to lights into the rooms
    b. Looking about times outside of the timetable
    c. Creating separate categories depending on circumstances
5. Other use case
    a. Getting the data every 5 minutes 0 Using that to predict the number of people there
6. Looking for more than an roadmap
    a. Extra features for the system
7. Talked about more of the high level ideas
    a. Api
    b. PDF
    c. Internal API
    d. Allowing admin to change map data
8. If we are performing data analytics first or to look the the higher level architecture

9. Architecture

10. Talking about database usage

11. Focus on modular design

12. Ensuring the web app tac on correctly with the server side
    a. Question about spark on architecture

13. Customer comments
    a. Making sure we provide documentation about how we selected each module
        i. Pros / cons on making a decision
        ii. To be included in the personal reports
    b. Having the SRS finished

14. Short talk with Anthoney
    a. User login: module timetables should be accessed by authorised users.
        i. use LDAP or
        ii. simple username/password option

Conclusion

23/6/16 - Planning for next two days

Agenda

- Review the current stage of the SRS and review the comment that have been made by other team members

Minutes

1. Meeting began with a review of the work that has already been done
2. Looked over section 3 of the SRS
    a. Added the conclusion of the previous meetings as the basis for a summary of the functions in section 3
    b. Added more details to the other sections
3. Divided up the work of each section between member of the group
4. Talked about the sprint planning process and the creation of tracking documentation

Conclusion

- Split of work to be done
    - Conor - 3.2.5 - 3.2.8
    - Silvia - 3.2.1 - 2.2.4
    - Devin - 3.4 - 3.5
    - Ophélie - 3.3 & 3.6

24/6/16 - End of Sprint 0 / Planning Week 3

Agenda

- Review work that has been completed
- Being planning stages for selection of architecture
- Start of planning for sprint 1

Minutes

1. Review of what stage we are at with the SRS
    a. Some sections to be finished
    b. NEed for database scheme
    c. Removal of sections that are not going to be used

2. Architecture
    a. Server - Use of Spring
        i. Spring can be used for both web development
    b. Data analysis
        i. Using Python for the basic generation of information
        ii. Data modeling

3. Coding design constraint documentation
    a. Python => Looking at Pep 8 regulations
    b. Java =>
    c. Naming conventions
    d. Silvia to take charge of coding format
4. Data cleaning - Devin
    a. Cleaning of information - how to do it.
    b. Issue of standard that the occupancy of data formatting.
    c. A number of issues formatting the data from the room occupancy file
        i. Look at how to turn it into logical formatted data

5. Planning for work to be done for Monday
6. Sprint planning
    a. Looking to finish the project by the 14th of August (Week 9)
    b. Sprint 0 => Week 2
    c. Sprint 1 => 3-4 (Rough working prototype - Server / Database / basic website / cleaning scripts)

d. Sprint 2 => 5-6 (Data management / Data modeling / model selection / server APIs / Website presentation)
e. Sprint 3 => 7-8 (Extra features of the website / UX of website / Android app development)
f. Sprint 4 => 9 (Deadline for project to be finished)
g. Sprint 5 => 10 (Debugging / Extra issues / overfill week)

Conclusion

1. Write up on the decision process of
    a. Database types => going with sql
    b. The java server architecture
    c. Decision on using Java to run the server and python to do the data analysis
2. Architecture
    a. Create documentation of the current proposed architecture
3. Sprint
    a. Create more outline plan for sprints
    b. Start process for
4. Work to do
    a. General => Users stories / SRS section 3 / Backlog for first sprint /

    b. Conor - finish off SRS section / Start sprint documentation burn down / Timetabling data
        i. Look into burn down charts
    c. Devin - Finished data cleaning / upload code to github / Code style documentation
    d. Silvia - SRS
    e. Ophelie - user stories - SRS

27/6/16 - Sprint 1 planning meeting

Agenda

- Have concluding sprint meeting for sprint 0
- Discuss plan for daily standup meetings (short meetings)
    - Current meetings have been too long on average -> need for more focus
- In Depth look at what the documentation requirements are for the project
    - Aim to reduce the unnecessary overhead

- Planning sprint meeting for sprint 1
- Create backlog with time estimates
    - Allocate work on sections

- Discuss overall project design
    - Web drop for file input

- Clarify the level of prototype required for week 4 presentation

- Database scheme => formal layout
    - Handling timetable changes / updated => historical information
    - Rooms / building extensible
    - Data input via website drop
    - Timetable formating => PK consisting of multiple elements (time / day / room)
        - Time table be room focused?
        - Contain meta info about subject (arts / comp sci ?)
- Looking at possible research extensions
    - Wifi signal mapping for rooms => expand to lib

Minutes

1. Sprint 0 concluding meeting
    a. Achieved most of the task.
    b. Drew up documentation up to section for the srs
    c. Started basic cleaning of data
    d. Users stories
    e. Started code format - official program guide language

2. Discussion of issues with data cleaning
    a. Look at what data needs to be preserved

3. Discussion about storage of data
    a. Ensure that all that the data will be stored in the database
    b. Disagreement about how the data will be stored in the database
    c. Looking a differnet methods of storage arrays
4. Layout of database
    a. Separate out data possibly
    b. Look at data analysis at how would separate out the date and what is supported
    c. Separate out data
5. Devin and Conor will create a proposed sql base schema
    a. Rename column name to have no spaces

6. Python cleaning scripts - all be in python

7. Planning out the sprint 1
    a. Planned out the sprint planning phases to the first wednesdays
    b. Review the proposals of work on the Wednesday and plan out the next stages of sprint

8. Review of priorities of the users stories
    a. Change of priorities

9. Literature review ideas
    a. Aerial
    b. Passive Wifi interference
    c. GSI and Passive wifi combination

Conclusion

29/6/16 - Architecture meeting with customers

Agenda

Minutes

1. Looking at spring for the Java
    a. Using spring
    b. Good for getting web application
2. Look at performance issues of calling Python from within Java
    a. Issues should be mention in the report
3. Looking at the performance issues
    a. Only if it is important if it affects the project
    b. Aim to get the project working
4. Excel files
    a. Standardised format
5. No of registered students information to be captured
    a.
6. Looking at your report
    a. Make notes behind how we went through the project
7. Coding Guidelines
8. Report
9. Adding to the basic spec
    a. Additional service that could be used with that
        i. Innovations the project.
        ii. Actually attempt to implement
    b. More future road map

Conclusion

29/6/16 - Group meeting

Agenda

- Review what was finished in the sprint
- Review DB schema and see what information is missing
- Programming guide outlines
- Website
- Discuss for Wednesday
- Planning next stage of sprint to Monday

Minutes

1. Meeting with the group to look over the information received from the meeting
2. Database concerns
    a. Double classes link to the shared class
    b. Check if class went ahead
        i. If color and cell not empty / and has name
3. What we need for the prototype
    a. Full database
    b. Querying to the database
    c. Identifying data that was not extracted
    d. Build up the server language
    e. Basic website template

4. Review of sprint
    a. First two parts completed
5. Review of database
    a. Sections missing
    b. Time table info - add in lectures / tutorials
        i. Assum lecture on less it states otherwise
    c. Add class type to ground truth data - lecture / tutorial
    d. Module - year to level of course
    e. Module - include information on postgrad / undergrad
    f. No registered student - no students registered for lesson
    g. Room - room still active
    h. Wifi log - two slots for user numbers
    i. Look into get tutorial / lecturer data from other sources
    j. Ground truth - people count

6. Pursue a full timetable
7. Access to uroom system
8. Presentation
    a. Associated user numbers main
    b. Keep authenticated

9. Website
    a. Website tree
    b. Upload data amalgamation
    c. Include on upload page for templates

    d. Style documentation guidelines
    e. API page

10. Stuff to have finished for Wednesday for prototype
    a. Have data input architecture fully implemented
    b. All documentation
        i. Website
        ii. Clean up SRS
        iii. Include final DB schema in SRS (Conor)
    c. Server up and running
    d. Database built
    e. Data input into database
    f. Rough website template
    g. Calculation for information not used
        i. Document derived information
    h. Presentation done
    i. Query to the DB showing up on website(Optional)

11. Planning second half of sprint 1.
    a. All should read up on the spring documentation
    b. When data is uploaded there should be a success message
    c. Handling data conflicts when data is mistakenly uploaded
        i. Overwrite
        ii. Handling old data
        iii.

4/7/16 - Midway sprint 0 - Pre for Wednesday meeting

Agenda

- Review the work that has been completed by each group member / team
- Plan for work to be finished for the prototype presentation

Minutes

1. Database comments
    a. Need a table to hold the maths modeling data
    b. Two module at once
    c. Look at foreign keys

2. Data input code
    a. Two modules running at once
    b. Time -> separate out start / finish
    c. Issue with new.xlsx file => should disappear on finish
3. Look at website
    a. Looks good
    b. Use skeleton outline for presentation

4. Plan for work tomorrow
    a. Gaol
        i. Have the Server up and running. Have the database implemented
        ii. Have data uploaded to the database and able to call it via command line
        iii. Be able to call data with java
        iv. Be able to display the data on the website by using the website ip
    b.

Conclusion

1. Conor - Sent database template out to rest of group / finish data input code
    a. Create presentation
2. Silvia - Looking at the data analytic models that we might use
3. Devin - Setting up server and getting data pulling working / single page jason

4. Ophelie - Looking at methods of java formatting / uploading current skelton work

5/7/16 - Day before presentation meeting

Agenda

Minutes

1. Issues with opening the server on the other devices

2. Looking at the goals of what we are going to try have ready

3. Setting up server to to be able to pull data from the database.

4. Presentation notes
    a. Still exploring the linear regression and the difference of error when grouping classes as one as compared to separating them

Conclusion

1. Things to have done for the presentation tomorrow
    a. Server running with basic single web page
    b. Data uploaded into the database
    c. Basic api working
    d. Bullet point on the data analytics approach we are looking at

    e. Basic ability to display a webpage with information with controller

11/7/16 - Group Meeting End of sprint 1. Start of sprint 2

Agenda

- Conclusion for sprint 1
- Discuss what we want to have completed for Wednesday's customer meeting
- Talk about Data Analytics
- Split up tasks for Spring Two
- Talk about what we wish to have completed by the end of Spring Two

Minutes

1. Sprint 1
    a. Finished most of the tasks
    b. Cleaning up: fix database issue before data analytics
2. Sprint 2
    a. Main goals as proposed previously
        i. Data management clean up. Clean up code base fix bugs
        ii. Data modeling
        iii. Model selection => documentation / work done to verify choice
        iv. Server APIs
        v. Basic Website finished
            1. Visual design implemented
        vi. Flesh out design for features of the website
            1. Testing for design features
    b.
3. Work plan => data analytics for Wednesday
    a. Explore relationship between the different features
        i. Interaction between features
        ii. Hypothesis on why the effect might be present and test for it
    b. Create hypotheses on how we are going to create the model
    c. Try logistic regression
    d. Look at how to turn the vector of number of people into
    e. Ask at customer meeting
        i. Type of regression we should use
        ii. Not required to have a high level of accuracy
    f. Model selection technique
        i. Verifying that you have chosen the correct model
        ii. Paper posted by mike on the blog
    g. Comparing the occupancy reports / wifi logs is see if there are issues

4. Using R for data
5. Testing of system call for python and java

6. Meeting at 12 on Wednesday

Conclusion

13/7/16 - Meeting day of data analytics customer meeting

Agenda

1. Discussion of plans for meeting
2. General sprint discussion

Minutes

1. Data analytics talk
2. Issue with room capacity
    a. Take in information from timetable if room doesn't exist

3. How we are going to create the search engines
    a. Types of searches we are going to allow

4. Choice of using R vs Python
    a. Going to try and use R for the data analytics

5. Specification of what we are looking for in the data analytics model
    a.

6. Goals for sprint 2 - First week of sprint
    a. Have database finished with all data loaded in
    b. Have unit testing for data phrases implemented
    c. Integrate data phraser into server with feedback

    d. R to pull the required data for the data frame from database
    e. Examination of what features to put in the model
    f. Testing of features and seeing what works best / Testing other models
    g. Model for logistic and linear regression / others
    h. Finishing table to store results / input into database
    i. Research on alternative forms of data analysis

    j. Api types - internal
        i. Daily data
        ii. Weekly summary data

    k. Have external API finished
        i. Module
        ii. Room
        iii. Date
        iv. Time

    l. Have skeleton of website done

7. Core project requirements
    a.

8. Goals Sprint 2 - 2nd week - Wednesday
    a. Have presentation ready

9. Break down of sprint 2 work

Conclusion

1. Data work storage and call

13/7/16 - Meeting with the customer

Minutes

1. Thinking about using R instead of python
    a. Issues of using multiple languages in the architecture
    b. Issues of mix skill in the group
        i. Benefits of learning R
    c. R has greater benefits for standalone application
    d. Performance issue with integrating languages
    e. Should choose the correct languages for the problem
        i. And integrate it correctly

2. Data analysis models
    a. Start with linear regression as a basic starting point
    b. Looking at logistic regression
    c. Other factors of rooms such as plugs
    d. Looking at factors of during the week

3. Looking a generalised linear model
    a. Homogeneous of the model

4. Group issues
    a. Splitting of work
    b. Issues of having single expert

5. Most of the rooms are not on the U-Room

6. Turning vector of the wifi logs into a single number / equation
    a. Trying different methods and which has the most accurate prediction

7. API setup
    a. How to structure the queries so that they are most efficient
    b. Issues for how to build the sql queries

8. Review of our goals for the sprint 2
    a. Finished off the data phrasing / unit testing / refactoring
    b. Create templates for data input and test
    c. Return data information
    d. Integrate the python phraser with the java

    e. Finished API
    f. Have layout of the website completed
    g. Have basic functionality of website implemented
    h. Have basic linear regression model build
    i. Have plan for further data analytics

9. Extra features
    a. Understanding the importance of each of the features
    b. Understanding how important it is
    c. Graphing times spent / relevance / difficulty
    d.

14/7/16 - Team meeting to flesh out first stage of sprint 2

Agenda

1. Plan out stage of sprint
2. Fill out scrum documentation based on minutes and try to allocate work as fairly as possible
3. Any other group issues

Minutes

1. Issue of clearing up the vision for the overall project
    a. Issue of understand what we are looking for in the data set
    b. Issue of how are planning on having the website layout
2. Whole group should learn how to use R
    a. So can work together on the data structure

3. Regression

4. Work split
    a. Database finish up - C
        i. Make unzip files
        ii. Two main issues with table names / capacity of room
        iii. Clean up code / refactoring
        iv. Implement feedback
        v. Unit testing
        vi. Move finished files to saved folder / failed folder
        vii. Integrate into server - C / D
        viii. Database redesign
            1. LInk the data processing table 1-1 for an instance of time table
            2. Each row will stored the processed information for a single timetable slot
            3. Add timestamp to store historical information / data
        ix. Storing data feedback

    b. Api / server database - D
        i. Integrate data phraser into server
        ii. Finalise at functionality of api - Raw info

iii. Finalise api output structure with group - Raw info
iv. Implement api - agreed functionality - Raw info
    1. Data by day / week
    2. Data by room
v. Consult with group on requirements for processed API
vi. Implement processed API that will return timetable with processed information
vii. Moving database to correct position in directories
viii. Data upload page server side

c. Data analytics - S
    i. Exploratory analysis to identify issues. Graphing features and justifying the features selection
    ii. Create a linear regression based on chosen features
    iii. Create logistic regression based on chosen features
    iv. Create report on the validity and success of the two chosen models
    v. Explore other types of model we may use - decision trees / other
    vi. If time try to implement the extra models and compare them to the other models
    vii. Implement other models before end of the sprint

d. Website - O
    i. Update wireframe and agree as a team what we think the website should look like - kako
    ii. Agree on main page functionality
        1. Use that build the requirements for the api
    iii. Start building the first few basic pages with navigation and footer
    iv. Be able to select classroom on main info and have pop up with information / graph
    v. Usability testing
        1. Need at least 5 people
    vi. Log in framework built
        1. Admin
        2. General users

    vii. Implement javascript to load data onto main info page

e. Extra - all
    i. Whole group should go over R so that they are familiar with the data analysis choices and understand the good
    ii. Carry code peer review after Wednesday to understand what each member of the group has achieved
    iii. Work together on having a draft literature review

Conclusion

1. Sprint 2 was fully planned out with good outline for goals
2. Goals for presentation 3 where set
3. Attempt to more evenly divided up work for this sprint

18/7/16 - Meeting week of data analytics presentation

Agenda

- Work together on different group issues
- Work on join sprint stories

Minutes

1. Group review of api and testing with new database on the server
2. Working on generating the sql request to get the data set ready to be worked on
3. Testing api and getting it working live
4.

Conclusion

20/7/16 - Data analytics presentation

Agenda

- Silva present group presentation
- Look at other groups presentation
- Review goals of what we want to try and complete by the end of the week

Minutes

1. Presentation went well
2. Left meeting to review sprint progress till following day
3. Information from other group presentation would indicate that models beyond linear / logistic regression do not have enough information to be run effectively
    a. Use this to write up section on how to explore certain models
    b. But will not attempt to implement them
    c. E.g. =>

21/7/16 - Second last meeting of sprint 2

Agenda

- Different issue that the group is experiencing
- Plans for the next two days

Minutes

1. Main goal => website
    a. Authentication page up and working / login page / connections
    b. Global maps
        i. Use our own maps
    c. Graphs / maps of the building
    d. Upload page
    e. Usability testing
    f.

2. Database
    a. Need information on

3. General review of steps need to finish of this sections of the sprint

Conclusion

1. All
    a. Finish up work related to previous sections of sprint
2. Work split
    a. C
        i. Upload page
        ii. Map for rooms
        iii. Feedback system for uploads
        iv. S => Table for data storage
        v. Fix directory .git
        vi. Update scrum 2 notes to reflect new work
    b. S
        i. Nav bar
        ii. Data analytics

iii. Graphs
iv. C => Tables for data storage

c. O
   i. Drop down menus
   ii. Getting api working
   iii. Usability testing

d. D
   i. Lookup connection between page / login
   ii. Implementing login procedure
   iii.

25/7/16 - End of sprint 2 / Start sprint 3 / Innovation customer meetings

Agenda

1. What work remained unfinished in sprint 2
2. Sprint 2 wrap up
3. Planning sprint 3
4. Work for Wednesday meetings

Minutes

1. Unfinished work / Sprint 2 wrap up
    a. Data analytics
        i. Have linear regresion done
            1. Low accuracy
        ii. Have logistic regression but only for binary
            1. Need to refine for more information
        iii. Need to continue to refine the basic models for production
        iv. Look at alternative models and see if will be possible to implement them within the time frame

    b. Website
        i. Login = Finished
            1. Logout yet to be implemented
        ii. Web page with map
            1. Partially finished
            2. 1 marker per a building
            3. Working of page
                a. Select building by marker
        iii. When you click on marker
            1. Pop up window
            2. Give basic information
            3. Tells you if it active or not
        iv. What happens when you click on a marker / select room / building
            1. Large pop up for the whole building
            2. Info windows open for the whole building
        v. What are we going to have in the windows
            1. Map of the building
            2. On top of the map have a layer
            3. Ability to move between floors

4. Possibility to click on the room and get room information

vi. Need to select user path for how to select information
    1. When user select market on the map this creates infowindow.
    2. User must then select data and click go

vii. Building information
    1. Replace map with large window on top
    2. Show all required information
    3. Graphs as well
    4. Ability to download pdfs

viii. Building maps
    1. Conor to propose method of overlaying colours onto map

ix. Extra webpage
    1. Contact form
    2. Website map - at the end
    3. Second main page for admin
    4. Upload page / with templates for how data should be formated
    5. Reports
    6. Documentation webpage

c. Server
    i. Up to date as of now. Expands as requirements increase
    ii. Password encryption
    iii. Protecting database from attacks

d. Data upload
    i. Method to present feedback of information
    ii. Code cleaning

e. Databases
    i. New table for building
        1. Have name / active / location
    ii. Data storage adapt to needs

2. Scrum notes 2 wrap up
    a. Looking over problems the group had
    b. Issues with getting regression correct
    c. Need to clean up work already done in order to solidify a base to build on.

3. Planning sprint 3
    a. Main Goals
        i. Have data analytics with information
        ii. Finish website with all pages laid out and working
        iii. Have the App finished / Other method of achieved results
        iv. PDF reports
        v. Finishing off API with analytics data

    b. General work to be done
        i. Need to implement a system the put all extra information into the database that is external to the data upload
            1. Need to add in extra meta data for each table
            2. This can be derived from the module names

        ii. Need to have the level of the course

4. Innovation - main areas
    a. App
        i. Correcting the model over time to improve accuracy
    b. PDF reports
    c. UX testing
    d. External API

Conclusion

1. Write up of how the work was divided
2. Most of the conclusion can be found in the sprint 3 notes

3. Basic stories backlog has been created
    a. Will give enough to work on for the next few days
    b. Main goals of the sprint have been outlined
    c. Will complete sprint backlog on Wednesday with a review of work that has been done
4. Meeting on the 26th => tomorrow
    a. Quick meeting to be held to discuss what we are going to talk about in the customer meeting on Wednesday
    b. Innovation meeting => 4 main core topics identified / need to be expanded on
    c.

26/7/16 - Quick meeting to talk about project innovations

General

1. Work break down
    a. O - UX testing
    b. C - PDF reports => jasper reports
    c. D - Api
    d. S - Application

2. Linear regression
    a. Still having issues with the linear regression in terms of accuracy
    b. Need to remove outliers

27/7/16 - Innovation Customer meeting

1. Asked how the previous sprint are going
2. Current level of progress / stage team is at on the core features
3. How working together as a team
4. Progress of sprints
    a. Slightly behind with building of the website

5. Questions about data analytics
    a. Rerun linear regression - high mean square error
    b. Should contact Georgana about getting help on the data analytics model.

6. Presentation of innovation
    a. Application
        i. Android studio
        ii. Prototype partially ready
        iii. Planning to have submission report
        iv. Key password

    b. UX
        i. Issues with integrating with agile - lean UX
        ii. Building app looking at prototypes
        iii. Getting other users to do testing
        iv. Using style guide to dictate how the

    c. API
        i. Example of external api running
        ii. Talked about sql injection attacks

    d. Database
        i. Indexing
        ii. Caching with derived tables
        iii. Cracking
        iv. Priority for the app
        v. Security

    e. PDF reports - Jasper reports

    f. Templates for upload

3/8/16 - Wednesday before current prototype week

Agenda

- General work state

Minutes

1. General work state
    a. Looking at building encryption into the website for user names / password
    b. Having a register page
    c. Website
        i. Have
    d. Android app
        i. Having a method on server able to handle the input from the android app.
        ii. Method will accept a number of inputs and insert into the database
    e. Style guide located on fontify

    f. Ability to upload single file at a time working. Need to be able to upload multiple files in one go

2. Method for population pages with information
    a. Looking at multiple calls vs using single call and javascript combination

3. Looking at how to launch the data input manager once files have been uploaded.

4. Data analytics
    a. Need to go cross validation
    b. Having issues with model selection
    c. Cross validation now working manually
    d. Issues with comparing the model and finding which one is best
    e. Looking for lowest AIC value
    f. How to compare model

5. Plan for the rest of this sprint
    a. Website
        i. Need to do the graphs
        ii. Need to remap the main page
        iii. Need to create the PDF page
        iv. Looking into to how the javascript is organised
    b. App
6. Main goals before Friday
    a. Webiste
        i. Have map fully working -
            1. Floor plans and different layers - C
            2. Graphs - O
        ii. Update database with new information and derive information - C
        iii. Contact page working -
        iv. Admin page - C
        v. Upload page with templates - C
7. Plan to re meet on Thursday => wednesday work plan
    a. C - upload page / derived data / maps
    b. D - Logout features / registration page /
    c. D / O => input page for application
    d. S => Finish up model selection / contact page

Conclusion

1. Work division for Wednesday / Thursday morning
    a. C - upload page / derived data / maps
    b. D - Logout features working / registration page /
    c. O => input page for application / work on form
    d. S => Finish up model selection / contact page

2. Possible need to redesign the processed data table in the db

3. Meeting on Thursday at 11

4/8/16 - End of sprint 3 planning phase

Agenda

- Planning the wrap up of the last stage of the sprint

Minutes

1. New dependency installed in the project that allows reloading when using a idea without have to restart the server

2. Linear model
    a. Without outliers
    b. Using the average log

3. Storage of data
    a. Have one to many table in between ground truth and time table
    b. This will store the raw results

4. Looking at Beta regression

5. Work to complete in this sprint
    a. Website
        i. Main page
            1. Have drop down menus filled accordingly
            2. Need to have map loadined correct
            3. Graphs
        ii. Site map

        iii. Create separate nav bar for admins

        iv. Upload page need templates
        v. Page to register new account
        vi. Instructions to using the api

        vii. PDF documents page (To be completed if we have time - Monday)
            1. PDF report for classroom => day / week
            2. PDF reports building => day / week

b. Application
    i. Finished first form - populated drop down / user to fill out
    ii. Section for user to insert password
    iii. Have upload to server finished

c. Server
    i. Logout section has been uploaded - Finished
    ii. Final api updated for processed data
        1. Just add processed data into what we already have
    iii. Java functions for emails

d. Database
    i. New table
    ii. Having derived data in the database
    iii. Indexes / derived tables
    iv. Priorities for different users

6. Style guide

Conclusion

- Number of tasks set out in order to complete this section of the sprint

8/8/16 - Meeting before prototype presentation

Agenda

Minutes

1. Need to finish up the map and get it working
2. Goals to finish before presentation
    a. Maps
    b. Upload page
        i. Upload logs
    c. Derived data
        i. Have password of account
    d. Site maps
    e. Need upload data analysis results into db
    f. Final api
    g. Graphs on main page
    h. Application
        i. Confirmation of success
        ii. Hard code the form validation input

    i. Potentially register new user page

3. Bring in old phone for presentation

9/8/16 - Meeting day before prototype meeting

Minutes

1. Issues causing conflicts with login issues
2. Discussing what are are going to cover in the presentation tomorrow
    a. Final prototype
3. R script is running on the server

11/8/16 - Wrap up of sprint 3 section

Agenda

1. Sketch out roadmap for the end of the sprint / end of code work
2.

Minutes

1. General
    a. Margin on transparent container - S - Done
    b. Create an error page and mapping it - C

2. Home page
    a. Home page - Search bar fill in data - C
    b. Home page - map updated for new search bar and loads div - C

    c. Home page - fix navbar to size and fix size of map - C
    d. Load replacement image for map in place - C
    e. Slider not working correctly - C
    f. Change key and colouring of page to correspond to logistic regression - C
        i. More details
        ii. Correspond to colour scheme
    g. Home page - Module name need to be fixed - C

    h. Graphs for main page - O
        i. Single graph for each room for overview of the day Done
        ii. Possibly using single map

    i. Home page - alternative building are loading CS map page - C

    j. Footer on main page - not visible - C - S: Probably I fixed with the nav bar (to be checked)

3. API - D
    a. API - Module name need to be saved as value rather then key - Done

4. Upload files - C
    a. Insert download templates for the page
    b. Center upload div
    c. Give feedback for upload
    d. Expand white div to bottom of the page
    e. Tie upload into server directory and launch two scripts once uploaded
    f. Have function that calls the python to move file
    g. Functions that calls R script to process files

5. PDF reports - S
    a. In processes of processing the API and turning into a pdf reports - Done
    b. Once request sent the report will be generated - Done partially
    c. Return link to user and allow them to download file
    d. Format page with instructions - Done partially

6. Admin settings - D
    a. Error message if user does not exist / when not successful - Done
    b. Change upgrade user => change user level - Done

7. API instructions - S
    a. Need to format the page to make it look nice - Done

8. Site map - S / O
    a. Image of user map
    b. Image for admin map
    c. Image for god map - Done
    d. Implement page - Done

9. Contact us - D
    a. Need to update email address - Done
    b. Email address of the sender - Done
    c. Reformat the page - D

10. Other code work - All
    a. Data phrasing - implement unit testing
    b. Java unit testing
    c. Implement automated testing - Travis
    d. Implement indexes / derived tables
    e. Tidy up sections and comment them

11. Android app - O
    a. Make sure refresh work - Done
    b. Comment code - Done
    c. Testing

12. Usability testing - O
    a. Finish reports
    b. Do survey

13. Implement overall testing system ?

14. Discussion of the Report
    a. Introduction
        i. Look at each section of the overall report
        ii. Introduce each of the larger group sections
        iii. How we would do the overall approach to each section
        iv. Outline of the methodology
    b. Group section
        i.

15. Work to look at next week
    a. Individual report
        i. Lit review
            1. Add paper to teamwork folder
        ii. Group section
    b. Group poster
    c. Portfolio - individual
    d. Personal blog - individual
    e. Contribution to class blog
    f. Final presentation - Wednesday the 24th
    g. Learn Latex

Conclusion

1. Work in individual sections as outlined in the minutes
    a. Try to complete each of these by Monday
2. Think over the larger sections of work to be done - report
3. Meet on Monday to finished out section
4.

15/8/16 - Final meeting for code wrap up.

Agenda

- Look over work to finish
- Talk about planning for the report

Minutes

1. Work to be finished - Website
    a. Main page - C
        i. Add info about what day it is
        ii. Do not allow selection of weekends
        iii. Put in graphs correctly

    b. Upload page - C
        i. Finish of work last time
    c. PDF reports - D / S
        i. Script to generate pdf finished
        ii. Need to tie them into the website

    d. API instructions
        i. Scroll bar on instruction boxes
        ii. Nav bar floating

    e. Site map
        i. Done

    f. Terms and conditions page
        i. Choose to implement page

    g. Contact us
        i. Change email address

    h. UX testing
        i. Finishing test
        ii. Getting users to work with them

    i. App
        i. Code cleaned

2. Work to carry our report
    a. Personal blogs
        i. People need to be up to date on their blogs
    b. Class blog
        i. Need to find single topic and submit this to class blog

    c. Individual reports - 26th
        i. Introduction topics
        ii. Project outcome topics list
        iii. Lit review good papers

    d. Poster
        i. Main sections on poster
        ii. Bullet points for poster

    e. Final presentation
        i. To be looked at next week

16. Work to look at next week
    a. Individual report
        i. Lit review
            1. Add paper to teamwork folder
        ii. Group section
    b. Group poster
    c. Portfolio - individual
    d. Personal blog - individual
    e. Contribution to class blog
    f. Final presentation - Wednesday the 24th
    g. Learn Latex

Conclusion

- Work each member is trying to complete has been outlined
- Aim to wrap up all remaining sections by tomorrow
- Start work on outline of the report

16/8/16 - Code wrap up / Start of write up work

Agenda

- Stage we are at with code wrap up
- Looking at planning for the write up
- Poster Planning

Minutes

1. Current code progress
    a. Main page
        i. Minor formating require
        ii. Add extra button for mid_low / mid_high
        iii. Remove corrector for first graph

    b. PDF page
        i. Pretty much finished

    c. Upload page
        i. Finished
        ii. Launching scripts

    d. API instructions
        i. Boxes to be updated

    e. Terms and conditions
        i. Remove links

    f. UX testing
        i. In progress
        ii. Getting class members to work on it tomorrow

2. Planning write up - Main sections
    a. Management process
    b. Code guidelines / framework e.g => PEP 8

    c. Database – choice and design
    d. Spring server – choice and setup
    e. Data cleaning process
    f. Data analytics process
    g. Website and designs
    h. Main page display / charts

    i. Testing process / explaining code
        i. Load testing
        ii. Running test
        iii. Explaining code to other people

    j. Performance issues
        i. Different languages
        ii. Database speed issues

    k. Innovations
        i. Application
        ii. API
        iii. UX testing
        iv. PDF reports

    l. Next step
        i. Feedback from upload
        ii. Making code base more modular
        iii. Automate testing

3. Poster due in =>

Conclusion

17/8/16 - customer meeting

Minutes

1. Presentation next week
    a. Everyone should present for a section
    b. Coherent story
    c. Should demo the software / website
    d. Should demo the mobile application

2. Portfolio
    a. Poster
        i. A4
        ii. Work together
        iii. Should be a summary of the overall report
        iv. Submit via blackboard
        v. High level picture of architecture

3. Report
    a. Project outcome - 40%
        i. Only suggested headings
        ii. Using latex template - Anthony

        iii. Blog posts
            1. Should be added into the appendix

        iv. Class blog post
            1. 10%

    b. What you have learnt
        i. What you have learnt over the whole project
    c. Interests
        i. What you are interest in in the course / outside related

    d. Contribution
        i. What you did personally

    e. Appendix
        i. Important in the blog post
        ii. Include documentation for sections
        iii. Include the SRS

4. Code
    a. Needs to be zipped up and submitted

    b. Should have the readme as well

5. Elevator pitch
    a. Knowledge level - background of the project
    b. UIP
    c. Sell your product
    d. Sell your application

21/8/16 - Meeting for group work planning and final presentation

Agenda

Minutes

1. Project outcome
    a. Management process - C
    b. Code guidelines / framework e.g => PEP 8 - S/O - Done

    c. Database – choice and design - C
    d. Spring server – choice and setup - D - Done
    e. Data cleaning process - C
    f. Data analytics process - S - Done
    g. Website and designs - O
    h. Main page display / charts - C / O

    i. Testing process / explaining code - D
        i. Load testing - Done
        ii. Running test
        iii. Explaining code to other people

    j. Performance issues - D
        i. Different languages - Done
        ii. Database speed issues - Done

    k. Innovations
        i. Application - O - Done
        ii. API - D - Done
        iii. UX testing - O - Done
        iv. PDF reports - S -Done

    l. Finished product - Pictures
        i. Pictures of working
        ii. Class diagram of project- C

2. Poster - S - Done

3. Readme - project
    a. General

    b. Android - O

4. Presentation final
    a. Data processing and storage
    b. Data analytics
    c. Server environment and spring
    d. Website design
    e.

5. Presentation - elevator pitch
    a. To work on next week

23/8/16 - Final presentation planning

Agenda

- Plan out final presentation

Minutes

1. Planning of tying project outcome together
    a. Can look at that on Wednesday

2. Do it on a Google presentation

3. Presentation - Roughly 15 pages

    a. Page for technology stack - D
    b. Server environment and spring - D
    c. Facilitating of innovations - D

    d. Data processing and database - C
    e. Upload page and tying into the server - C

    f. Data analytics - S
    g. Ground truth data innovation - S

    h. Website design - O

    (Innovations)

    i. UX design - O
    j. Android application - O

    k. PDF report - S

    l. Creation of external API - D

    m. Overview of the project - Example pictures - C

    n. Future work - 1 slide - C